

**Fish Passage Preliminary Submittal Checklist****Preliminary Submittal Checklist**

No.	Submittal Element	Included
<b>Fish Passage Plan Sheets (8 sheets)</b>		
1.	Sheet Location Map – includes stream stationing and road alignments for reference	<input checked="" type="checkbox"/>
2.	Stream Alignment and Grading Plans – Proposed Channel and Culvert Plans with proposed grading, wall labels, and labels for lengths and spans of proposed crossings	<input checked="" type="checkbox"/>
3.	Stream LWM and Habitat Features Plans – include lengths, diameters, and locations of LWM; locations of Meander Bars	<input checked="" type="checkbox"/>
4.	Stream Alignment and Geometry Table – Curve and Tangent Data	<input checked="" type="checkbox"/>
<b>Fish Passage Profile Sheets (2 sheets)</b>		
5.	Stream Profiles with elevation labels	<input checked="" type="checkbox"/>
6.	Streambed Mix Depth	<input checked="" type="checkbox"/>
7.	Stream Stationing and Grades	<input checked="" type="checkbox"/>
8.	Typical Culvert 1, 2, and 3 cross-sections with locations and sizes	<input checked="" type="checkbox"/>
9.	Proposed Utility Crossing Locations, Sizes, and Depths	<input checked="" type="checkbox"/>
<b>Fish Passage Detail Sheets (2 sheet)</b>		
10.	Typical Sections for Culverts 1, 2, and 3 with utility crossings	<input checked="" type="checkbox"/>
11.	Typical Meander Bar Detail – Plan and Cross-section	<input checked="" type="checkbox"/>
12.	Meander Bar General Notes for Material Gradation, Installation, and Slash	<input checked="" type="checkbox"/>
<b>Fish Passage Cross-sections (4 sheets)</b>		
13.	Typical Sections per channel segment	<input checked="" type="checkbox"/>
14.	Material Depth and Gradation	<input checked="" type="checkbox"/>
15.	LWM Section Details– Logs identified and cross-referenced to LWM and Habitat Features Plans	<input checked="" type="checkbox"/>
16.	LWM Schedule/Table identifying logs with reference to LWM Plans and LWM Section Details	<input checked="" type="checkbox"/>
<b>LWM Details (3 sheets)</b>		
17.	LWM Section Details with stream section and logs	<input checked="" type="checkbox"/>
18.	Logs identified and cross-referenced to LWM and Habitat Features Plans	<input checked="" type="checkbox"/>
19.	LWM Schedule/Table identifying logs with reference to LWM Plans and LWM Section Details	<input checked="" type="checkbox"/>
20.	LWM accounts for Total number of LWM	<input checked="" type="checkbox"/>
21.	Mobile wood details for in culvert with accurate stream, culvert, and log dimensions, and 2-year flow depth	<input checked="" type="checkbox"/>
22.	LWM Control Table and Log Schedule	<input checked="" type="checkbox"/>

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<b>Draft Final Hydraulic Design Report (Report – 72 pages; Appendices – 86 pages)</b>		
23.	Project Overview with Vicinity Map	<input checked="" type="checkbox"/>
24.	Site Conditions – Land Cover, Soils, Fish Habitat and Geomorphology including existing channel gradient, bankfull width measurements, sediment size and supply, and presence of LWM	<input checked="" type="checkbox"/>
25.	Hydrology and Peak Flow Estimates	<input checked="" type="checkbox"/>
26.	Hydraulic Analysis and Design – Model Development, Existing Conditions Model Results, Channel Design including planform, shape, alignment, and gradient	<input checked="" type="checkbox"/>
27.	Design Methodology	<input checked="" type="checkbox"/>
28.	Future Conditions – Proposed Hydraulic Opening	<input checked="" type="checkbox"/>
29.	Proposed Conditions Model Results	<input checked="" type="checkbox"/>
30.	Water Crossing Design – Minimum Hydraulic Opening and Freeboard	<input checked="" type="checkbox"/>
31.	Streambed Design	<input checked="" type="checkbox"/>
32.	Channel Complexity – Design Concept and Stability Analysis	<input checked="" type="checkbox"/>
33.	Climate Resilience	<input checked="" type="checkbox"/>
34.	Scour Analysis – Contraction, Local, Bend, and Total Scour	<input checked="" type="checkbox"/>
35.	Existing and Proposed channel cross-sections	<input checked="" type="checkbox"/>
36.	Existing and Proposed Water Surface Profiles	<input checked="" type="checkbox"/>
37.	Hydraulic Field Report Form	<input checked="" type="checkbox"/>
38.	Stream Design Parameter Exhibits	<input checked="" type="checkbox"/>
39.	MGS Flood Model Results for Peak Flows	<input checked="" type="checkbox"/>
40.	SRH-2D Model Results – Existing and Proposed	<input checked="" type="checkbox"/>
41.	Streambed Material Sizing Calcs	<input checked="" type="checkbox"/>
42.	Scour Calculations	<input checked="" type="checkbox"/>
43.	Large Woody Material Calculations	<input checked="" type="checkbox"/>
44.	Climate Resilience Output	<input checked="" type="checkbox"/>

**COMMENTS**

Number of fish passage sheets for Plans, Profile, Sections, and Details to be determined at later date.